

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. APPLICATION NO. 09/981,715
ATTORNEY DOCKET NO. Q66778

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) A method of link adaptation in a mobile radiocommunication system, said method comprising:
~~including selecting a coding and/or modulation scheme as a function of radio conditions represented by an average of radio measurement results, and said method being such that said average includes:~~

calculating a first an-average of radio measurement results representing radio conditions over a relatively short period for rapidly selecting a more rugged coding and/or modulation scheme if radio conditions are degraded rapidly, or

calculating a second an-average of radio measurement results representing radio conditions over a relatively longer period for selecting a less rugged coding and/or modulation scheme or a more rugged coding and/or modulation scheme if radio conditions are not rapidly degraded, and

selecting a coding and/or modulation scheme based on said first or second average, wherein a more rugged coding and/or modulation scheme is selected based on said first average if radio conditions are degrading rapidly, or a more rugged coding and/or modulation scheme is selected based on said second average if radio conditions are not degrading rapidly, otherwise a less rugged coding and/or modulation scheme is selected based on said second average.

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2. (*Currently Amended*) The method claimed in claim 1, wherein said selection is based on a ~~system of thresholds which have a first threshold~~ value for determining if radio conditions ~~have are~~ degraded rapidly and a second threshold value for determining if radio conditions have ~~are~~ not degraded rapidly, said second threshold value being relatively higher or relatively lower than said first threshold value according to whether the value of said radio measurements increases or decreases when radio conditions are degraded.

3. (*Original*) The method claimed in claim 1 wherein said radio measurements include raw BER measurements.

4. (*Original*) The method claimed in claim 1 wherein said radio measurements include SIR measurements.

5. (*Original*) The method claimed in claim 1 wherein, if one of said coding schemes has a coding rate equal to 1, said radio measurements for selecting a more rugged coding scheme from said coding scheme having a coding rate equal to 1 include measurements other than raw BER measurements and said radio measurements for selecting said coding scheme having a code rate equal to 1 from a more rugged coding scheme include raw BER measurements and measurements other than raw BER measurements.

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6. (*Original*) The method claimed in claim 5 wherein said radio measurements other than raw BER measurements include SIR measurements.

7. (*Original*) The method claimed in claim 5 wherein said radio measurements other than raw BER measurements include received signal power level measurements.

8. (*Original*) The method claimed in claim 1 wherein, when transmission resumes on said link to which said link adaptation is applied following an interruption of transmission, and if said measurements have not been effected during said interruption of transmission, said coding and/or modulation scheme that was being used before said interruption of transmission is used if said period of interruption is relatively short or a default coding and/or modulation scheme is used otherwise.

9. (*Original*) The method claimed in claim 8 wherein said default coding and/or modulation scheme is the most rugged coding and/or modulation scheme.

10. (*Original*) The method claimed in claim 1 wherein said average is obtained by means of an exponential filter defined by a forget factor parameter that is expressed directly as a function of the time period between two measurements or an approximation thereof.

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11. (*Currently Amended*) The method claimed in claim 10, wherein said filter is defined by the following equations of the following type:

$$[[\bullet]] \quad y_{n+1} = \alpha^{\Delta t_n} y_n + 1$$

$$[[\bullet]] \quad AV_M_{n+1} = \left(1 - \frac{1}{y_{n+1}}\right) AV_M_n + \frac{1}{y_{n+1}} m_{n+1}$$

in which:

[[-]] AV_M_{n+1} is the value of AV_M after an $(n+1)^{th}$ measurement m_{n+1} ,

[[-]] Δt_n designates the time interval between the n^{th} measurement and the $(n+1)^{th}$ measurement, or an approximation of that time interval, and

[[-]] α is a parameter defining the filter.

12-14. (*Cancelled*).

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15. (*Previously Presented*) A mobile radiocommunication network entity comprising means for implementing a link adaptation which comprises:

means for selecting a coding and/or modulation scheme as a function of radio conditions represented by an average of radio measurement results;

means for calculating an average over a relatively short period, wherein the average over a relatively short period is used for rapidly selecting a more rugged coding and/or modulation scheme if radio conditions are degraded rapidly; and

means for calculating an average over a relatively longer period, wherein the average over a relatively longer period is used for selecting a less rugged coding and/or modulation scheme, or a more rugged coding and/or modulation scheme if radio conditions are not rapidly degraded.

16. (*Original*) The entity claimed in claim 15 wherein said link adaptation is applied to an uplink.

17. (*Original*) The entity claimed in claim 15 wherein said link adaptation is applied to a downlink.

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18. (*Previously Presented*) A mobile station comprising means for implementing a link adaptation which comprises:

means for selecting a coding and/or modulation scheme as a function of radio conditions represented by an average of radio measurement results;

means for calculating an average over a relatively short period, wherein the average over a relatively short period is used for rapidly selecting a more rugged coding and/or modulation scheme if radio conditions are degraded rapidly; and

means for calculating an average over a relatively longer period, wherein the average over a relatively longer period is used for selecting a less rugged coding and/or modulation scheme, or a more rugged coding and/or modulation scheme if radio conditions are not rapidly degraded.

19. (*Original*) The mobile station claimed in claim 18 wherein said link adaptation method is applied to a downlink.

20. (*Original*) The mobile station claimed in claim 18 wherein said link adaptation method is applied to an uplink.

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21. (*Currently Amended*) A method of link adaptation in a mobile radiocommunication system, said method ~~comprising including selecting a coding and/or modulation scheme as a function of radio conditions represented by an average of radio measurement results, and said method being such that said average includes:~~

~~calculating a first average over a first period of time if a predetermined condition is not met, or~~

~~calculating a second average over a second period of time longer than said first period of time if said predetermined condition is met, and~~

selecting a coding and/or modulation scheme based on said first or second average,
wherein a more rugged coding and/or modulation scheme is selected based on said first average
if a predetermined condition is met, or a more rugged coding and/or modulation scheme is
selected based on said second average if the predetermined condition is not met, otherwise a less
rugged coding and/or modulation scheme is selected based on said second average.

22. (*Previously Presented*) The method claimed in claim 21 wherein said predetermined condition is that said radio conditions are degrading rapidly.

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23. (*Previously Presented*) The method claimed in claim 21, wherein said predetermined condition is that said first average is less than said second average by more than a predetermined amount.

24. (*Currently Amended*) The method claimed in claim 21, wherein said method changes from using said first average to using said second average when said first average is worse than said second average by a first predetermined amount, and said method changes from using said second average to using said first average when said first average is worse ~~wore~~ than said second average by a second predetermined amount less than said first predetermined amount.